WHAT IS CLAIMED IS:

1. A simulated moving bed adsorptive separation process comprising:

circulating fluid through a circuit, said circuit comprising an adsorbent and a discrete non-separating section;

passing a plurality of fluid streams into said circuit and withdrawing a plurality of fluid streams from said circuit;

incrementing the location of said fluid streams along said circuit to simulate movement of said adsorbent;

increasing the fluid flow rate in a first portion of said circuit to compensate for a volume of said discrete non-separating section; and

changing the flow rate of at least one of said fluid streams consistent with increasing the fluid flow rate in said first portion of the circuit.

2. The process of claim 1 wherein said increase in fluid flow rate in the first portion of the circuit is defined as

$$R = V * K / T$$

wherein R is the increase in fluid flow rate in said first portion of said circuit, V is the volume of said discrete non-separating section, T is the length of time the increase in flow rate is applied, and K is a coefficient between about 0.05 and about 3.0.

3. The process of claim 2 wherein T is greater than one half of one step, a step being the time between an increment of one of said fluid stream locations along said circuit.

4. The process of claim 1 further comprising reestablishing the flow rate of said fluid stream to be essentially equivalent to the flow rate of said fluid stream prior to the change.

5. The process of claim 1 wherein the first portion of said circuit comprises said discrete non-separating section.

6. The process of claim 1 further comprising maintaining the fluid flow rate in a second portion of said circuit simultaneous with increasing the fluid flow rate in said first portion of the circuit.

7. The process of claim 1 wherein the fluid flow rate in said first portion of the circuit is increased at least once in twenty consecutive cycles, a cycle being one complete traversal of said circuit by one of said fluid streams.

8. A simulated moving bed adsorptive separation process comprising:

circulating fluid through a circuit, said circuit comprising an adsorbent and a discrete non-separating section;

passing a plurality of fluid streams including at least a first and a second primary fluid stream into said circuit and withdrawing a plurality of fluid streams including at least a third and a fourth primary fluid stream from said circuit thereby defining four zones, a zone being a portion of said circuit between each pair of sequentially located primary fluid streams;

periodically shifting the location of said four primary fluid streams along said circuit to simulate movement of said adsorbent, a step being the time

between each such shift and a cycle being the completion of each available step in said circuit by one of said primary fluid streams;

increasing the fluid flow rate in at least a portion of one of said zones, said zone comprising said discrete non-separating section; and

changing the flow rates of at least two of said fluid streams.

9. The process of claim 8 further characterized in that it is carried out in counter-current mode.

10. The process of claim 8 further characterized in that it is carried out in co-current mode.

11. The process of claim 8 wherein the first primary fluid stream comprises a feed mixture selected from the group consisting of paraffin isomers, olefins and paraffins, aromatics and paraffins, oxygenates, glucose and fructose, racemates, cymene isomers, cresol isomers, dimethyl naphthalene isomers, and C_8 aromatic hydrocarbons.

12. The process of claim 8 wherein the adsorbent is selected from the group consisting of silicalite, zeolites, non zeolitic molecular sieves, resins, and carbon.

13. A process for separating a feed mixture into at least an extract component and a raffinate component through use of an adsorbent having greater selectivity for said extract component as compared to said raffinate component, said process comprising:

maintaining fluid flow within a circuit comprising a plurality of beds containing said adsorbent and at least one discrete non-separating section;

passing input streams into said circuit, including at least a feed stream comprising said feed mixture and a desorbent stream, wherein the location of said feed stream defines a downstream boundary of a purification zone and an upstream boundary of an adsorption zone, and the location of said desorbent stream defines a downstream boundary of a buffer zone and an upstream boundary of a desorption zone;

withdrawing output streams from said circuit including at least a raffinate stream comprising said raffinate component and an extract stream comprising said extract component, wherein the location of said raffinate stream defines a downstream boundary of said adsorption zone and an upstream boundary of said buffer zone, and the location of said extract stream defines a downstream boundary of said desorption zone and an upstream boundary of said purification zone;

periodically incrementing said feed, desorbent, raffinate, and extract stream locations along the circuit to simulate countercurrent movement of the adsorbent with respect to the fluid flow within said circuit wherein a step is defined as the time between each such incremental movement of said stream locations and a cycle is defined as the time required for said feed stream to complete each available step in said circuit; and

changing the flow rates of at least two of the streams selected from the group consisting of input streams, output streams, and combinations thereof,

and increasing the fluid flow rate through at least one of said zones comprising said discrete non-separating section.

14. The process of claim 13 wherein said beds of adsorbent are contained within one column and said discrete non-separating section comprises a chamber crossover line that connects the terminal ends of said column to each other.

15. The process of claim 13 wherein said beds of adsorbent are contained in a plurality of N columns, and N crossover lines defining N discrete non-separating sections interconnect said columns such that a second terminal end of each column, except the last column, is connected to a first terminal end of the following column, and a second terminal end of the last column is connected to a first terminal end of the first column.

16. The process of claim 13 wherein the flow rates of said raffinate and desorbent streams are both decreased thereby increasing the fluid flow rate in said buffer zone where said buffer zone includes said discrete non-separating section.

17. The process of claim 13 wherein the flow rate of said extract stream is decreased and the flow rate of said raffinate stream is increased thereby increasing the fluid flow rate in said purification zone where said purification zone includes a first discrete non-separating section.

18. The process of claim 17 wherein a portion of said increased raffinate stream flow rate is replaced by a corresponding decrease in the flow rate of said desorbent stream.

19. The process of claim 18 further characterized in that said adsorption zone includes a second non-separating section when the purification zone flow rate is increased.

20. The process of claim 19 wherein the extract stream comprises para-xylene.